

**ABSTRACT****EXTRACTION OF PALM VITAMIN E, PHYTOSTEROLS  
AND SQUALENE FROM PALM OIL**

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Phytosterols, squalene and Vitamin E are recovered from phytonutrients concentrate derived from crude palm oil by the disclosed invention via esterification, transesterification, vacuum distillation, saponification, crystallization and organic solvents partitioning. Crude palm oil is subjected to esterification and transesterification for the production of crude palm oil methyl esters. Phytonutrients concentrate containing phytosterols, squalene, Vitamin E and unreacted monoglycerides is recovered from crude palm oil methyl esters by multi-stages vacuum distillation in which components with higher molecular weight are filtered during second stage vacuum distillation. The purified phytonutrients concentrate is subjected to saponification process and the unsaponifiable matter is added to a combination of solvents for crystallization of phytosterols. The filtrate enriched in squalene and Vitamin E is separated to its individual squalene-rich layer and vitamin E-rich layer via organic solvents partitioning.

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**Figure 1**